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28. The method of claim 27 further comprising the step of:

transmitting the calculated location area to a user.

29. The method of claim 27 wherein said signal strength data includes a signal strength list maintained by said mobile station.

30. The method of claim 27 wherein said first and second plurality of antennas are the same.

31. An apparatus for locating a mobile station within the geographic serving area of a mobile communication system, wherein said mobile station is capable of sending signals to and receiving signals from antennas located in cells within the geographic serving area, the apparatus comprising:

a mobile location module comprising a memory storing computer program instructions and a processor for executing said computer program instructions, wherein said computer program instructions instruct the processor to perform the following steps:

a) receiving signal strength data representing the signal strengths of signals being received by the mobile station from a first plurality of antennas, said signal strengths being dependent, at least in part, on a cell propagation characteristic;

b) calculating the distances between the mobile station and a second plurality of antennas using said signal strength data and an estimated cell propagation characteristic value, wherein each of said calculated dis-

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tances contains an error component which depends upon the estimated cell propagation characteristic value;

c) repeating step b) while varying the estimated cell propagation characteristic values to reduce said error components; and

d) calculating the location of the mobile station using the calculated distances having reduced error components.

32. The apparatus of claim 31 wherein said estimated cell propagation characteristic is propagation path slope.

33. The apparatus of claim 31 wherein said estimated cell propagation characteristic is antenna pattern rolloff.

34. The apparatus of claim 31 wherein said estimated cell propagation characteristic is the height of the mobile station relative to the antenna in the cell.

35. The apparatus of claim 31 wherein said computer program instructions further instruct the processor to perform the step of:

e) transmitting the calculated location of the mobile station.

36. The apparatus of claim 31 wherein said signal strength data includes a signal strength list maintained by said mobile station.

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